E3S-LS3

Reliable Detection Unaffected by PCB Holes or Notches

- High-limit E3S-LS3□ is suitable for incorporation in devices.
- Wide-range E3S-LS3□W is ideal for detecting tall components mounted on boards.
- Timer function models available.



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Be sure to read Safety Precautions on page 4.

Ordering Information

Sensors

Red light	
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Sensing method	Appearance	nothed Appearance Connection Sensing distance Timer	Connection	Sensing distance	Soneing distance	Timer	Model	
Sensing method		method	function	function	NPN output	PNP output		
Convergent-reflective	Pre-wired (2 m)	20 to 35 mm *	Without	E3S-LS3N 2M	E3S-LS3P 2M			
			With	E3S-LS3NT 2M	E3S-LS3PT 2M			
		*	Without	E3S-LS3NW 2M	E3S-LS3PW 2M			
	ਰ		10 to 60 mm *	With	E3S-LS3NWT 2M	E3S-LS3PWT 2M		

^{*} For white paper: 80×80 mm.

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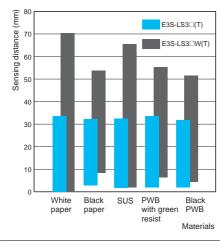
Ratings and Specifications

Sensing method	Convergent-reflective			
Model	E3S-LS3N(T)/-LS3P(T)	E3S-LS3NW(T)/-LS3PW(T)		
White paper *	20 to 35 mm	10 to 60 mm		
Black paper *	20 to 30 mm	15 to 50 mm		
elength)	Red LED (660 nm)			
tage	12 to 24 VDC±10%, ripple (p-p) 10% max.			
tion	25 mA max.			
	Load power supply voltage: 24 VDC max., Load current: 100 mA max., (Residual voltage: 1 V max. for NPN output or 2 V max. for PNP output) Open collector output configuration: NPN or PNP output depending on the model, Operating mode: Light-ON			
ponse time Operate or reset: 1 ms max.				
timer function)	OFF-delay range: 0.1 to 1.0 s (adjustable)			
ion	Incandescent lamp: 5,000 lux max.			
range	Operating: 35% to 85% (with no condensation) Storage: 35% to 95% (with no condensation)			
nce	20 MΩ min. (at 500 VDC)			
h	1,000 VAC at 50/60 Hz for 1 minute			
ice	Destruction: 10 to 55 Hz with a 1.5-mm double amplitude for 2 hrs each in X, Y and Z directions			
	Destruction: 500 m/s², 3 times each in X, Y and Z directions			
ion	IEC 60529 IP40			
od	Pre-wired (standard length: 2 m)			
tate)	Approx. 80 g			
Case	ABS (Acrylonitril Butadiene Styrene)			
Lens	Methacrylic resin			
	Instruction manual, M3 screws, Adjustment screwdriver (only models with timer function)			
	Model White paper * Black paper * velength) Itage otion In timer function) Ition Iture range In rang	Model E3S-LS3N(T)/-LS3P(T) White paper * 20 to 35 mm Black paper * 20 to 30 mm velength) Red LED (660 nm) Itage 12 to 24 VDC±10%, ripple (p-p) 10% max. Load power supply voltage: 24 VDC max., Load current: 100 mA max., (Residual voltage) (Popen collector output configuration: NPN of Operating mode: Light-ON Operate or reset: 1 ms max. Operate or reset: 1 ms max. OFF-delay range: 0.1 to 1.0 s (adjustable) Incandescent lamp: 5,000 lux max. Iture range Operating: -10 to 55°C (with no icing or constorage: -25 to 70°C (with no icing or constorage: 35% to 95% (with no condensationage:		

^{*} For 80 × 80 mm.

Engineering Data (Typical)

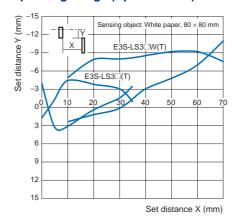
Sensing Distance vs. Materials



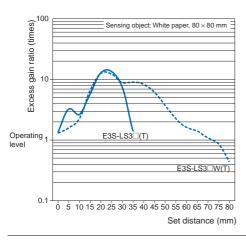
Operating Range (Left and Right)

Sensing object: White paper, 80 × 80 mm E3S-LS3 (T) E3S-LS3 (T) Set distance X (mm)

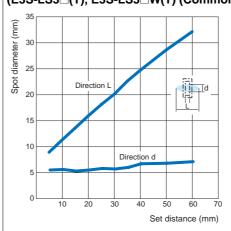
Operating Range (Up and Down)



Excess Gain vs. Set Distance



Spot Diameter vs. Sensing Distance (E3S-LS3□(T), E3S-LS3□W(T) (Common)



I/O Circuit Diagrams

NPN Output

Model	Operation mode	Timing charts	Output circuit
E3S-LS3N E3S-LS3NW	Light-ON	Incident light No incident light Operation indicator ON (orange) OFF Output transistor ON OFF	Operation Indicator (orange) Photo-electric Black
E3S-LS3NT E3S-LS3NWT		Incident light No incident light Operation indicator ON (orange) OFF Output transistor ON OFF T: OFF-delay timer (0.1 to 1.0 s)	Sensor main oricult Z Blue 0 V

PNP Output

Model	Operation mode	Timing charts	Output circuit
E3S-LS3P E3S-LS3PW	Light-ON	Incident light No incident light Operation indicator ON (orange) OFF Output transistor ON OFF	Operation Indicator (orange) Photo-
E3S-LS3PT E3S-LS3PWT		Operation indicator ON (orange) OFF Output transistor ON OFF T: OFF-delay timer (0.1 to 1.0 s)	electric Sensor main circuit Blue Load DV

Safety Precautions

Refer to Warranty and Limitations of Liability.



This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



Precautions for Correct Use

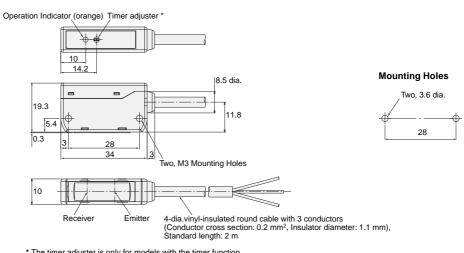
Do not use the product in atmospheres or environments that exceed product ratings

Dimensions

(Unit: mm)
Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

E3S-LS3N(T)/E3S-LS3P(T) E3S-LS3NW(T)/E3S-LS3PW(T)





^{*} The timer adjuster is only for models with the timer function.

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

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At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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Disclaimers

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It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

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Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

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2008.11

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

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ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

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